

Claims

1. Magnetically inductive flow meter having a measuring tube, an electrode array with electrodes disposed on opposite sides of said measuring tube transversally to a direction of flow therethrough, and a coil arrangement having at least one saddle coil whose axis extends transversally to the direction of flow and transversally to the electrode array and which has four sides, two first sides extending parallel to the direction of flow and two second sides extending in the circumferential direction of the measuring tube, characterized in that located between each first coil side (8) and the measuring tube (2) is in each case a magnetically conductive element (12) that takes up a first part of the magnetic flux, with a second part of the magnetic flux from an area surrounded by the saddle coil (4) bypassing the element (12).  
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2. Flow meter according to claim 1, characterized in that the element (12) proceeds from an area on the inner edge (14) of the first coil side (8) and terminates between the first coil side (8) and the measuring tube (2).  
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3. Flow meter according to claim 1 or 2, characterized in that the element (12) has an angled section (17) applied to the first coil side (8) from inside.  
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4. Flow meter according to claim 3, characterized in that the section (17) can be secured either to the coil side (8) or to the measuring tube (2).  
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5. Flow meter according to one of the claims 1 to 4, characterized in that the element (12) is embodied

as U-shaped with two arms (19, 20) and attached to the first coil side (8) from inside.

6. Flow meter according to claim 5, characterized in  
5 that the arms (19, 20) are pretensioned toward each other.

7. Flow meter according to claim 5 or 6, characterized in that the arm (20) between the first coil side (8) and the measuring tube (2) is longer transversally to the direction  
10 of flow (3) than the other arm (19).

8. Flow meter according to one of the claims 1 to 7,  
characterized in that the element (12) extends over the length of the first coil side (8) in the direction of  
15 flow (3).

9. Flow meter according to one of claims 1 to 8,  
characterized in that the element (12) has a recess (21) between its ends (22, 23) in the direction of flow  
20 (3).

10. Flow meter according to one of the claims 1 to 9,  
characterized in that the element (12) has an undulating surface.

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11. Flow meter according to one of the claims 1 to 10,  
characterized in that the element (12) is made of soft magnetic iron.

30 12. Flow meter according to one of the claims 1 to 10,  
characterized in that the element (12) is made of magnetically conductive plastic.

13. Flow meter according to one of the claims 1 to 12,  
characterized in that the element (12) is co-  
encapsulated with the measuring tube (2).

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14. Flow meter according to one of the claims 1 to 13,  
characterized in that the element (12) is extended  
transversally to the direction of flow (3) such that a measuring  
error will be minimal.